

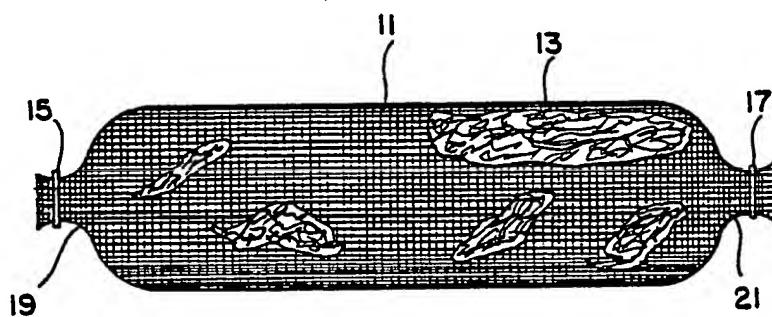


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(54) Title: FISHING BAIT



(57) Abstract

A fishing bait which includes a casing element (11) having material carried therein (13), the material (13) being characterized as attractive to fish, wherein the casing element (11) comprises a length of cotton material having a sleeve-like configuration, the cotton material being sufficiently porous to permit the gradual escape of some of the attractive material (13) into the water in which the bait is used and wherein the casing element is adapted to receive a fishing hook.

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DescriptionFISHING BAITTechnical Field

This invention relates generally to bait which is useful in fishing, particularly commercial fishing, and more particularly concerns fishing bait which includes a casing element which in turn contains material attractive to fish.

Background Art

In commercial fishing, the commonly used bait is fish such as herring, octopus, salmon, pollock, codfish, and hake, as well as other fish. The bait fish is typically cut into relatively small portions by hand or with the use of bait cutters, placed on hooks by hand or through the use of automatic baiters, and then set in the water. However, this process, which is typical throughout the industry, has several distinct disadvantages. It is labor intensive, and typically results in a significant amount of waste, up to forty percent (40%) of the original weight of the fish used for the bait. Further, the bait portions are typically nonuniform in size and configuration, often leading to improper hooking, as well as overbaiting and underbaiting. Still further, and perhaps most significant, such bait has a relatively short useful life on the hook. All of the above disadvantages add to the cost of commercial fishing, and limit productivity.

The art has been characterized by relatively small advances, such as the use of power equipment in cutting the bait and maintaining the temperature of

the bait relatively low during handling in order to reduce spoilage and increase its useful life. This is perhaps partially because the art has not been characterized by significant research or development. In fact the bait itself and the process described above which is currently used by most commercial fishermen, is very similar to that which has been used for a very long time.

The present invention is a manufactured bait which significantly reduces and/or solves the above described disadvantages and/or problems of conventional bait.

Disclosure of the Invention

Accordingly, the invention is a fishing bait which includes a casing element which is adapted to internally carry material which is attractive to fish, wherein the casing element is constructed to permit gradual escape of some of the attractive material when the bait is in the water and further adapted to receive a fishing hook.

Brief Description of the Drawings

Figure 1 is a schematic view showing a length of casing and a separate portion of ground fish, comprising one embodiment of the fishing bait of the present invention.

Figure 2 is a partially cut-away view of a bait portion embodying the principles of the present invention.

Figure 3 shows one possible placement of a fishing hook for the bait shown in Figure 2.

Figure 4 shows an alternative to the arrangement of Figure 3.

Best Mode For Carrying Out The Invention

The present invention is a bait which is useful for all bait fishing, but is most practical for commercial fishermen who use a large number of baited hooks. A single bait portion of the present invention is shown in schematic, partially cut-away, form in Figure 2. The bait portion 10 comprises an outer casing 11 which, because of its porosity, or following puncture thereof, permits gradual escape or leaching of inner material 13, which is contained within the casing and which is attractive to fish, when the bait 10 is in the water. The respective ends of each bait portion 10 are closed by two metal clips 15 and 17.

In the embodiment shown, casing 11 comprises a tightly woven cotton or polyester fabric. The casing is in the form of a sleeve and is readily commercially available. Both the cotton and/or the polyester fabrics, being woven and thus porous, would permit some quantity of oil from the ground fish and also some of the ground fish itself to leach out into the surrounding water, thus attracting fish to the bait and hence the hook. The casing has a tight enough weave to prevent a substantial portion of the ground fish from escaping. Both cotton and polyester are also strong enough to withstand the action of fish, as well as predators, attacking the bait, without tearing or breaking apart. In the embodiment shown, cotton is preferred, because it has the desirable structural characteristics pointed out above, and is more biodegradeable compared to polyester or other fabrics .

In the embodiment shown, the casing is sleeve-like in configuration and thus contains no longitudinal seams, which makes it somewhat easier to use and the resulting bait less labor intensive than using a flat piece of fabric and stitching it to provide a sleeve-like configuration for the casing. The metal

clips 15 and 17 are conventional and secure the two ends 19 and 21 of casing 11 in a conventional fashion. Typically, the clips 15 and 17 are approximately 1/4" long and tightly close off each end of the casing.

It should be understood that casing 11 could comprise materials beside cotton and/or polyester, including plastics, and metal or plastic screen material. The material could even be non-porous in certain circumstances, although in that event the casing would have to be punctured in some manner prior to the bait being set, so as to still permit slow escape of a small portion of the inner material and/or the oils thereof into the water. Solid plastic casings could be utilized, as long as they have sufficient strength to withstand the action of attacking fish and other marine predators, without tearing or breaking apart, which would otherwise result in the inner material spilling out into the surrounding water, thereby destroying the usefulness of the bait.

Although the embodiment shown uses metal clips to secure the two ends of the casing, other means or techniques could be used, such as by tying the casing itself, using string or wire to tie the ends, by heat sealing, or some other similar means.

In the embodiment shown, the casing 11 is tightly stuffed with ground fish such as herring, octopus, salmon, hake or any other fish. However, the inner material could be vegetable or other matter which is attractive to fish or which is treated to be attractive to fish. The inner material, i.e. fish, is ground to permit use of the entire fish, thereby substantially eliminating any waste, a significant improvement over conventional methods. The grinding is fairly uniform and also fairly fine, so that fish oils, and semi-liquid portions of the ground fish, can move through the casing 11 into the surrounding water after the gear

has been set. Materials other than fish could be used if attractive to fish. Also, filler material can be used with the ground fish to decrease the expense of the bait. Still further, material inherently unattractive to fish could be made attractive by saturating such material with fish oil, etc.

The bait shown in Figure 2 can be readily made in various sizes, depending upon the particular fish to be caught. In fishing for halibut, for instance, the bait will typically be 1 - 1 1/4" in diameter and 4" long, while in fishing for black cod, a bait portion approximately 1/2" in diameter and 1 1/2" long is used. Both of the above sizes can be easily made using the principles of the present invention. Other sizes can be conveniently made as well. The weight of a bait portion will vary, but halibut bait will typically be approximately 4 ounces.

In the process for making the bait, conventional meat grinding and sausage stuffing machines are used. The fish or other material used for the inner material or stuffing is first ground to a relatively fine consistency, as explained above. The grinding of the stuffing material, while not essential to the invention, is desirable, since it permits ease of stuffing as well as a better leaching of the fish oil, etc. through the casing to the surrounding water.

The fish to be ground is typically slightly thawed from a frozen state, which permits ease of grinding. The ground fish is kept close to freezing during stuffing, to increase ease of handling, to avoid loss of material and maintain quality. The casing will usually be cut initially into lengths of approximately 30 feet, although other lengths could be used, and then is stuffed by means of a conventional sausage stuffing machine which inserts the ground fish fairly

tightly into the cotton casing, as shown figuratively in Figure 1. The machine pumps the fish into the casing, so that handwork is kept to a minimum.

The length of stuffed casing is then applied to another portion of the machine or another machine which automatically applies the clips to the ends of each portion of bait. This could be done by automatically advancing, clipping and severing the length of casing into individual bait portions, or the stuffed casing could be advanced by hand, clipped by machine and then severed by hand. All of the above machines are commercially available from a wide variety of sources. The machines can be controlled to provide a wide variety of sizes, as explained above. The resulting bait, however, will have the advantage of substantial uniformity of size and configuration.

The bait of the present invention can be attached to fishing hooks either by hand or with an conventional automatic baiter. Referring to Figure 3, the hook 23 is typically inserted in the vicinity of one end 25 of the finished bait portion 27, near the metal clip 29, which is a secure position for the hook. Alternatively, a loop could be formed at one end of the bait portion, or, referring particularly to Figure 4, a grommet 31 can be inserted at one end 33 of a bait portion 35 to provide a fixed opening for insertion of a hook 37.

With automatic baiters, a large number of bait portions are lined up and the hooks are then passed by the bait portions. The hooks grab the bait and then the gear is cast overboard and set, in water which may vary from quite shallow to extremely deep (700 fathoms) and greater. The use of the present invention is certainly not limited to a particular depth or to catch particular fish. The invention does result in a significant increase in proper baiting,

either when the baiting is accomplished by hand or with an automatic baiter, of which many are commercially available, primarily because of the uniform size and configuration of the bait portions.

The fishing gear includes long lines, and hundreds if not thousands of gangions and hooks secured thereto. The casing of the bait has sufficient strength that the bait remains on the hook during the setting of the gear. Further, as explained above, the casing can withstand the action of predators such as shrimp, crab, starfish, and sand fleas, as well as fish, without breaking apart. Tests have indicated that the useful life of the present bait is several times that of conventional bait.

Thus, a fish bait has been described which makes use of ground fish or other material attractive to fish, wherein the ground fish is stuffed into a casing which is adapted to permit small portions of the ground fish and/or the oils thereof to escape into surrounding water to attract fish. By virtue of the construction of the bait, as well as its uniform size and configuration, the percentage of proper hooking of the bait is increased, as well as the useful life of the bait.

Although a preferred embodiment of the present invention has been disclosed for purposes of illustration, it should be understood that various changes, modifications and substitutions may be incorporated in such embodiment, without departing from the spirit of the invention as defined by the claims which follow.

Claims

1. Fishing bait, comprising:

a casing element having material carried therein, said material being attractive to fish, the casing element being constructed to permit gradual escape of some of said attractive material when the bait is in water, wherein the casing element is adapted to receive a fishing hook.

2. An article of Claim 1, wherein said attractive material is fish.

3. An article of Claim 2, wherein said fish is ground fish.

4. An article of Claim 3, wherein said casing is a sleeve-like element comprising a material which is sufficiently porous to permit the gradual escape of said attractive material.

5. An article of Claim 4, wherein the bait is sausage-like in configuration and includes means for closing the opposing ends of said casing element.

6. An article of Claim 5, wherein said closing means includes metal clips, and wherein a fishing hook can be secured to the bait through said casing in the vicinity of one of the metal clips.

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FIG. 1

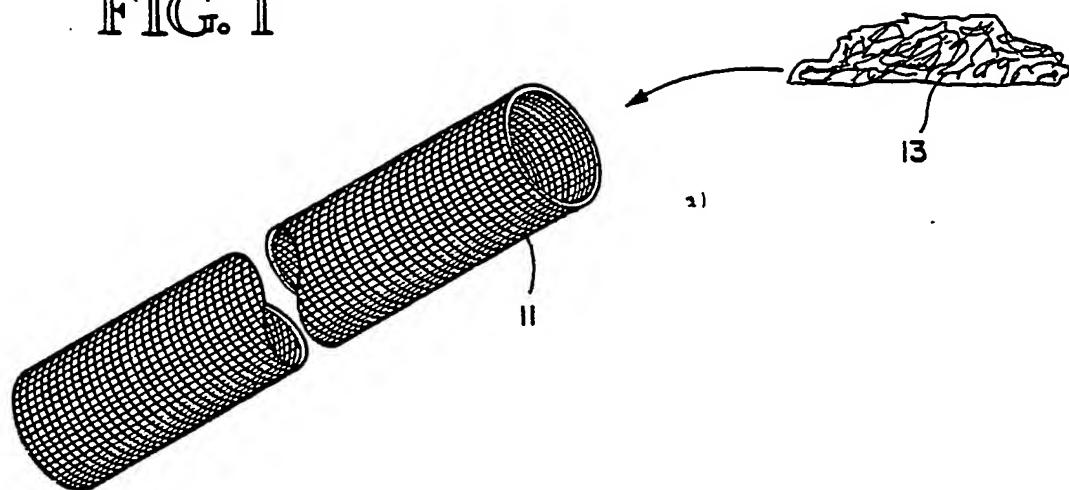


FIG. 2

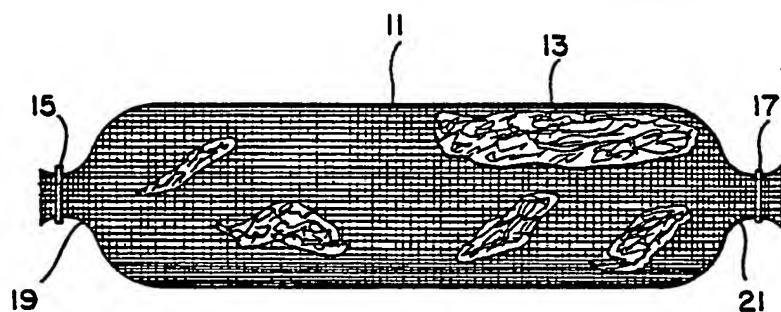
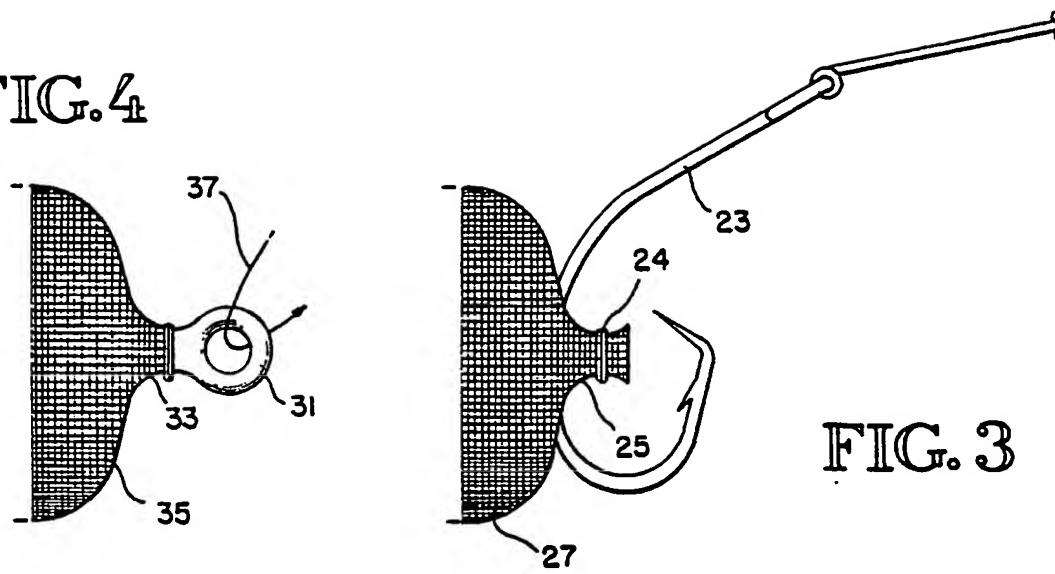


FIG. 4



INTERNATIONAL SEARCH REPORT

International Application No PCT/US 85/00806

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) *

According to International Patent Classification (IPC) or to both National Classification and IPC

IPC⁴: A 01 K 97/04

II. FIELDS SEARCHED

Minimum Documentation Searched ?

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Documentation Searched other than Minimum Documentation
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III. DOCUMENTS CONSIDERED TO BE RELEVANT*

| Category * | Citation of Document, ¹¹ with indication, where appropriate, of the relevant passages ¹² | Relevant to Claim No. ¹³ |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| X | US, A, 3958357 (FRANK) 25 May 1976, see column 2, line 27 - column 4, line 16; figures 1-3 | 1,4,5 |
| A | -- | 6 |
| X | US, A, 3047975 (PRETORIUS) 7 August 1962, see column 1, line 70 - column 3, line 5; figures 1-3 | 1,4 |
| A | -- | 5,6 |
| X | US, A, 4053640 (TADASHI TAKASUGI) 11 October 1977, see column 1, line 35 - column 3, line 32 | 1,2,4 |
| A | -- | 3 |
| X | US, A, 2555088 (IRWIN) 29 May 1951, see column 2, line 3 - column 3, line 41; column 3, line 74 - column 4, line 40; figures 1-9 | 1,2,4,6 |
| X | US, A, 2780021 (FAGG) 5 February 1957, see column 1, line 48 - column 3, line 2; figures 1-6 | 1,2,4 |

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IV. CERTIFICATION

Date of the Actual Completion of the International Search
6th December 1985

Date of Mailing of this International Search Report

20 DEC. 1985

International Searching Authority

Signature of Authorized Officer

EUROPEAN PATENT OFFICE

G.L.M. Grudenberg

ANNEX TO THE INTERNATIONAL SEARCH REPORT ON

INTERNATIONAL APPLICATION NO. PCT/US 85/00806 (SA 9477)

This Annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the European Patent Office EDP file on 17/12/85

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|----------------------------------------------|---------------------|----------------------------|---------------------|
| US-A- 3958357 | 25/05/76 | None | |
| US-A- 3047975 | | None | |
| US-A- 4053640 | 11/10/77 | JP-A- 51141723 | 06/12/76 |
| US-A- 2555088 | | None | |
| US-A- 2780021 | | None | |

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